



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,584	10/24/2003	Baiyi Zhao	2002B130/2	1077
23455 7590 05/04/2007 EXXONMOBIL CHEMICAL COMPANY 5200 BAYWAY DRIVE P.O. BOX 2149 BAYTOWN, TX 77522-2149			EXAMINER MCDONOUGH, JAMES E	
			ART UNIT 1755	PAPER NUMBER
			MAIL DATE 05/04/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/693,584

Applicant(s)

ZHAO ET AL.

Examiner

James E. McDonough

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 9-33 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 18-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

(1) Applicant's arguments, see page 26, paragraphs 1-7, and page 27, paragraphs 1-2 filed 3/1/2007, with respect to the abstract, and claims 1-6 and 9-15 have been fully considered and are persuasive. The rejections have been withdrawn.

Original Rejection

(2) 3. Claims 2-6 and 9-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, last two lines, the embodiment where the two X ligands are connected to form a 3-50 member metallocyclic ring would appear to be too strained to exist if there are only 3 members to the ring, and it is not clear if the 3-50 includes non-ring atoms.

(3) 5. Claims 2-6, 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Buchwald et al., USP 6,307,087 (hereafter referred to as Buchwald).

Buchwald discloses the invention as currently claimed when one reads the term "abstractable ligands" broadly (col. 7, 1. 5-44; col. 31, 1. 40 to col. 32, 1. 32).

Response to Arguments

Applicant's arguments have been fully considered, but are not persuasive.

(4) Applicants argue that the three-member ring would not be too strained to exist. This argument is found to be persuasive, however, there still remains the problem of the claim not being clear if the 3-50 includes non-ring atoms.

(5) Applicants argue that since claim 16 has been cancelled and claim 17 is now dependent on claim 1, is found to be not persuasive because 1.) claim 16 was not cancelled as alleged by the applicants 2.) claim 17 was not amended as alleged by the applicants and 3.) claim 1 is cancelled so it cannot be dependent on this claim.

(6) Applicants request the examiner to give a more detailed explanation of what is meant by "construing the term abstractable ligand broadly". Since the current examiner is not the examiner who wrote this, the current examiner can not be sure what the original examiner was asking but, I believe that what the original examiner meant was that if hydrocarbyl radicals or hydrocarbyl-substituted radicals encompassed ligands such as acetate or acetylacetone then the reference would read on the instant claims.

(7) Applicants argue that Buchwald does not disclose bridged complex structures as instantly recited in applicants' claims. This is found to be not persuasive because Buchwald clearly teaches a bridged ligand hybrid of an amine and a phosphine that would read on the ligand of the instant claims. Furthermore the reference teaches reacting these ligands with metal compounds such as $\text{Ni}(\text{acac})_2$ and, the skilled artisan

Art Unit: 1755

would appreciate that upon reaction of this hybrid amine-phosphine ligand with $\text{Ni}(\text{acac})_2$ the ligand would chelate with empty d-orbitals on the metal and not displace the acac ligands, since the acac ligands are charged and the hybrid ligand is neutral, and it is always enthalpically favored to form the most possible bonds, this is the main principle governing reactions and ligand bonding in coordination complexes and organometallics. Also, just because the complex is formed in situ does not mean that 1.) it is not formed or 2.) that a skilled artisan would/could not comprehend and predict the reaction product of the metal complexes stated and the hybrid ligand. Furthermore, if the same or similar ligands of the applicants invention can chelate to $\text{Ni}(\text{II})$ and $\text{Pd}(\text{II})$ complexes, the ligands of the reference would be expected to behave in the same manner absent any evidence to the contrary.

(8) Applicants further argue the Buchwald reference does not disclose metals having the abstractable ligands. This is found not persuasive because the acac ligand is an abstractable hydrocarbyl-substituted ligand.

(9) Applicants argue that the metals of Buchwald are in their zero oxidation state not the highest oxidation state as in the instant claims. This is found not persuasive because Buchwald does not say they can't be in high oxidation states only that they should be capable of being reduced to the low oxidation state. Furthermore looking at the metals of Buchwald some are clearly in their highest oxidation state.

Art Unit: 1755

(10) Applicants also argue that Buchwald teaches Palladium where their claims exclude palladium. This is found not persuasive because 1.) Buchwald teaches metals other than palladium 2.) applicants' argument on page 28, paragraph 3, filed 3/1/2007 applicants state "Applicants' metals such as Ni and Pd are Ni(II) and Pd(II)" but Buchwald clearly shows examples of Ni(II) and Pd(II) complexes (column 32, lines 22-32).

(11) Applicants state that the examiner has not responded to the argument presented in the previous response where it was stated by the applicants that "The specific palladium and nickel complexes disclosed in column 32 of Buchwald are not complexes which contain a bi-dentate aminophosphine ancillary ligand... Column 32 of Buchwald does say that bi-dentate ligands such as hybrids of phosphine with amines can be added as such to the Buchwald reaction mixture along metal species to thereby form in situ the catalytic complexes of interest to Buchwald."

(12) THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1755

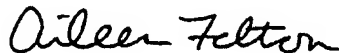
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

(13) Any inquiry concerning this communication or earlier communications from the examiner should be directed to James E. McDonough whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JEM 4/3/2007


AILEEN FELTON
PRIMARY EXAMINER